UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,601	06/02/2000	Shuji Ono	3562-0103P	6153

7590 05/05/2004	**EXAMINER**
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ART UNIT	PAPER NUMBER
2615	

Falls Church, VA 22040-0747

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**.　　2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-18_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-18_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All　b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   Acknowledgement is made of the amendments to claims 5, 8-10. The 35 U.S.C. 112,

second paragraph rejections of claims 8-10 have been withdrawn. The objections to claims 5 and

9 have also been withdrawn.

Response to Arguments

2.   Applicant's arguments filed February 20, 2004 have been fully considered but they are

not persuasive.

The applicant has argued: "The Examiner alleges that Nozaki inherently teaches storing a

predetermined selection condition. Applicant respectfully disagrees with this allegation. For

example, Nozaki's conditions relate only to picture shooting conditions, i.e. blur amount, spatial

frequency component, the high area component amount of the spatial frequency, and release time

lag." The office respectfully disagrees. Nozaki is directed towards selecting an image from

among a plurality of images based upon an evaluation value related to shooting conditions,

which reads upon a predetermined selection condition.

The applicant has argued: "Nozaki fails to teach…a plurality of predetermined selection

conditions for a desirable aimed object." The office respectfully disagrees. Nozaki teaches the

selection of an image whose evaluation of the shooting condition is highest among the image

data stored in memory [0049]. Thus, each image is compared with the others to determine if its

evaluation of the shooting condition is the highest and is selected when its evaluation of the

shooting condition is highest, which reads on a plurality of selection conditions (Is this particular image's evaluation of the shooting condition the highest?).

The applicant has argued: "Tachibana is merely concerned with face images, not an aimed object corresponding to an independent object within an image at which a photographer aims, such as a person in a room, a fish in an aquarium, or a bird on a branch, for example." The office respectfully disagrees. As demonstrated in Figs. 2-4 and 7 of Tachibana, the face images being examined have been isolated and extracted from images, and are thereby independent objects within an image at which a photographer aims. Furthermore, the claim language does not cite a person in a room, a fish in an aquarium, or a bird on a branch.

The applicant has argued: "Tachibana fails to disclose storing a plurality of predetermined selection conditions that relate to the aimed object…no storing of predetermined selection conditions relating to a desirable aimed object is taught by Tachibana." The office respectfully disagrees. Tachibana teaches the evaluation of an image based upon expression feature data, and the selection of one particular image from a plurality of images whose expression feature data is closest to that of a reference face image (abstract). Thus, each image is compared with the others to determine if its expression feature data is closest to the that of the reference face image and is selected when expression feature data is closest to the reference face image, which reads on a plurality of selection conditions (Is this particular image's expression feature data the closest to that of the reference face image's?).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1, 3, 4, 8, 11, 13, 14, 17, and 18 rejected under 35 U.S.C. 103(a) as being

unpatentable over Nozaki et al, U.S. Pub. No. 2003/00193610, in view of Tachibana et al, J.P.

Patent No. JP9212620, included in the applicant's Information Disclosure Statement.

Regarding claim 1, Nozaki teaches an image selecting apparatus (electronic camera) for

selecting a desired image from among a plurality of images obtained by continuously

photographing a subject [0048], comprising: an extractor (shooting evaluation means 3)

extracting data (spatial frequency content, high area component amount of spatial frequency,

etc.) from each of said plurality of images [0043-0049, 0226], and a selecting unit (still image

selection means 4) selecting a desired image from among said plurality of images [0049]. Nozaki

teaches the selection of an image whose evaluation of the shooting condition is highest among

the image data stored in memory [0049]. Thus, each image is compared with the others to

determine if its evaluation of the shooting condition is the highest and is selected when its

evaluation of the shooting condition is highest, which reads on a plurality of selection conditions

(Is this particular image's evaluation of the shooting condition the highest?) and the selection of

at least one selection condition resulting in a selection of a desired image. The condition-storing

unit storing a predetermined selection conditions are inherently taught. Nozaki teaches that

evaluation items other than those recited in the Nozaki patent may be used to determine which

image to select [0078]. Nozaki does not teach that the selection of an image is based upon a desired aimed object within the image. Tachibana teaches the evaluation of an image based upon expression feature data, which reads on the desired aimed object, and the selection of one particular image from a plurality of images (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus of Nozaki with the practice of evaluating a plurality of images based upon expression feature data taught by Tachibana to make an apparatus that continuously images a subject and selects the image with the best depiction of an aimed object. One of ordinary skill would have been motivated to make such a modification to obtain the best quality image of a human face.

Regarding claim 3, Nozaki teaches that said extractor extracts data based on image information included in each of said images [0071].

Regarding claim 4, Tachibana teaches the detection of a judgement location (expression features) from data of an aimed object (a human face) based on image information included in an image (abstract). Tachibana teaches that a reference face image with average expression feature data is set and the source face image closest to the purpose is selected, which reads on the at least one predetermined selection condition being related to the desirable judgment location, namely, the expression features, and the selection of an image with the desired aimed object (human face) including a judgement location (expression features) satisfying said selection condition (expression features closest to that of reference image) related to said desirable judgement location (abstract).

Regarding claim 8, Nozaki teaches a camera [0037] comprising: an input unit (image pick-up means 1) forming a plurality of images of a subject [0048], an extractor (shooting

evaluation means 3) extracting data from each of said plurality of images formed by the input

unit [0049, 0226], and a selecting unit (still image selection means 4) selecting a desired image

from among said plurality of images, said image satisfying a predetermined selection condition

[0049, 0044-0046]. The condition-storing unit storing a predetermined selection condition is

inherently taught. Nozaki teaches that evaluation items other than those recited in the Nozaki

patent may be used to determine which image to select [0078]. Nozaki does not teach that the

selection of an image is based upon a desired aimed object within the image. Tachibana teaches

the evaluation of an image based upon expression feature data, which reads on the desired aimed

object, and the selection of one particular image from a plurality of images (abstract). Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention was made

to combine the apparatus of Nozaki with the practice of evaluating a plurality of images based

upon expression feature data taught by Tachibana to make an apparatus that continuously images

a subject and selects the image with the best depiction of an aimed object. One of ordinary skill

would have been motivated to make such a modification to obtain the best quality image of a

human face.

Regarding claims 11, 13, and 14, because the apparatuses of claims 1, 3, and 4 are taught,

the methods corresponding to the apparatuses are also taught.

Regarding claim 17, Nozaki in view of Tachibana teach the apparatus of claim 1. See

above. Nozaki teaches a recording medium that stores a program for executing the algorithm of

the patent [0081]. It would have been obvious to one of ordinary skill to implement the algorithm

of Nozaki in view of Tachibana using a program stored on a recording medium.

Regarding claim 18, Tachibana teaches the evaluation of an image based upon expression feature data, which reads on the desired aimed object, and the selection of one particular image from a plurality of images based on expressions closest to a reference expression, which reads on a condition related to shape (abstract).

4.   Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al, U.S. Pub. No. 2003/00193610, in view of Tachibana et al, J.P. Patent No. JP9212620, and further in view of Mihara et al, U.S. Pub. No. 2002/0126879.

Regarding claim 2, Nozaki in view of Tachibana teach the apparatus of claim 1. See above. Nozaki in view of Tachibana do not teach that the extractor extracts data of said aimed object based on depth information indicating the distance to each part of said subject. Mihara does teach the extraction of data based on depth information indicating the distance to each part of the subject [0039]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the apparatus that captures multiple images of a subject and selects the best image taught by Nozaki in view of Tachibana with the practice of extracting image data based on distances to the parts of the subject taught by Mihara to make an image sensing apparatus that uses distance information to extract data from a plurality of images and to select the best image. One of ordinary skill would have been motivated to make such a modification to select a high quality image from a plurality of images using extracted image data.

Regarding claim 12, because the apparatus of claim 2 is taught, the method corresponding to the apparatus is also taught.

5.   Claims 5-7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Nozaki et al, U.S. Pub. No. 2003/00193610, in view of Tachibana et al, J.P. Patent No.

JP9212620, and further in view of Marugame, U.S. Patent 6,226,396.

Regarding claim 5, Nozaki in view of Tachibana teach the apparatus of claim 1. See

above. Nozaki in view of Tachibana do not teach that the extractor extracts data of a plurality of

aimed objects from each of said plurality of images, and said selecting unit selects a plurality of

desired-aimed-objcts for each of said plurality of aimed objects. Marugame teaches the

extraction of multiple subjects from an image (col. 1, lines 60-62; col. 8, lines 64-66). Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention was made

to combine the practice of extracting multiple subjects taught by Marugame with the practice of

capturing a plurality of images, extracting the target subject, and selecting a best representation

of the target subject from among the plurality of images taught by Nozaki in view of Tachibana

to make an apparatus that continuously photographs a scene, extracts a plurality of aimed objects

from each image, and selects an image with the best representation of the multiple aimed objects.

One of ordinary skill would have been motivated to make such a modification to obtain an image

that maximizes the image quality of as many subjects in the image as possible.

Regarding claim 6, Tachibana teaches the detection of a judgement location (expression

features) from data of an aimed object (a human face) based on image information included in an

image (abstract). Tachibana teaches that a reference face image with average expression feature

data is set and the source face image closest to the purpose is selected, which reads on the at least

one predetermined selection condition being related to the desirable judgment location, namely,

the expression features, and the selection of an image with the desired aimed object (human face)

including a judgement location (expression features) satisfying said selection condition
(expression features closest to that of reference image) related to said desirable judgement
location (abstract). It would have been obvious to detect judgement locations for each of a
plurality of aimed objects, and to select the aimed objects that best satisfy a predetermined
condition.

Regarding claims 15 and 16, because the apparatuses of claims 5 and 6 are taught, the
methods corresponding to the apparatuses are also taught.

Regarding 7, Tachibana teaches that the plural face images are synthesized based on the
data, which reads on an image-composite unit compositing said plurality of desired aimed
objects (human faces) to form a composite image, said composite image including said plurality
of desired aimed objects for each of said plurality of aimed objects extracted from said plurality
of images (abstract).

6.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al, U.S.
Pub. No. 2003/00193610, in view of Tachibana et al, J.P. Patent No. JP9212620, in view of
Mihara et al, U.S. Pub. No. 2002/0126879, and further in view of Yoshigahara et al, U.S. Pub.
No. 2002/0085747.

Regarding claim 9, Nozaki in view of Tachibana teach the apparatus of claim 8. See
above. Nozaki in view of Tachibana in view of Mihara teach the practice of using distance data
to extract data from the plurality of images. See above. Nozaki in view of Tachibana in view of
Mihara do not teach an input unit that includes a parallactice image data input unit inputting a
parallactic image from different view points, wherein the extractor extracts data based on depth

information obtained from the parallactic image. Yoshigahara teaches the capturing of an image

from different points of view and the determination of distances to parts of the image using the

image data captured from different points of view, which reads on the parallactic image [0004].

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention

was made to combine the apparatus of Nozaki in view of Tachibana in view of Mihara with the

practice of using image data captured from different view points to determine the distance to a

part of a subject taught by Yoshigahara et al to make an image sensing apparatus that captures

multiple frames of image data, determines the distance to parts of the subject using data from

different viewpoints, extracts data based on the distance information, and selects an image whose

extracted data based on distance information satisfies a predetermined condition. One of ordinary

skill would have been motivated to make such a modification to render a better extraction of an

aimed object for determining which image to select.

7.   Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nozaki et al, U.S.

Pub. No. 2003/00193610, in view of Tachibana et al, J.P. Patent No. JP9212620, and further in

view of Nonweiler et al, U.S. Patent 6,262,778.

Regarding claim 10, Nozaki in view of Tachibana teach the apparatus of claim 8. See

above. Nozaki teaches a plurality of selection conditions that may be used for determining how

to select an image from a plurality of images [0072-0078]. Nonweiler et al teaches that a user

may select the desired parameters for image processing from a menu of options (col. 3, lines 31-

34). Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the practice of setting parameters from a list of options taught by

Nonweiler with the multiplicity of selection conditions taught by Nozaki in view of Tachibana to

make an apparatus that allows the user to select a selection condition from a display of selection

condition options. One of ordinary skill would have been motivated to make such a modification

to enable the user to compare the quality of images gained by using different selecting

conditions, and to use the selecting condition that produces images best suited to the user's

wishes.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Dorothy Wu whose telephone number is 703-305-8412. The

examiner can normally be reached on Monday-Friday, 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DW
April 30, 2004

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